

Application No.: 10/617,727

Docket No.: 2336-193

AMENDMENTS TO THE DRAWINGS:

The attached replacement sheets of drawings include changes to Figs. 1, 2, 4(c) and 5(d).

In Fig. 1, reference numeral 3 has been deleted.

In Fig. 2, reference numeral 24 has been deleted.

In Fig. 4(c), reference numeral 42 has been added to be consistent with page 11, line 3 of the specification.

In Figs. 5(d) and 5(e), reference numerals 56 and 57 have been deleted.

Attachment: Replacement Sheet(s)

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Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-11 are pending in the application. The claims remain unchanged notwithstanding the art rejections manifested in pages 3-9 of the Office Action. The specification and drawings have been revised to provide a consistent description of the preferred embodiments. No new matter has been introduced through the foregoing amendments.

The objection to the drawings is believed overcome in view of the above amendments. In particular, reference numerals 3, 24, 56, and 57 have been removed from the drawings, and reference numeral 32 has been added to the specification.

The 35 U.S.C. 103(a) rejection of claims 1, 4, and 5 as being obvious over *Usui* (JP 06-204569) and *Kondo* (JP 2000-269556) is traversed, because a prima facie case of obviousness has not been properly established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) quoted in *MPEP*, section 2143.

For the reasons presented below, Applicants respectfully submit that the Examiner's

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rejection has failed to meet, at least, the first and third criteria.

First, the references are not properly combinable in the manner the Examiner proposed. The Examiner alleged that *Usui* teaches all limitations of independent claim 1, except for the fourth and fifth pattern parts integrated with both sides of the first pattern part to allow surface of the fourth and fifth pattern parts to face each other. The Examiner, relying on elements 3b of *Kondo* for the missing claim elements, argued that it would have been obvious to modify the *Usui* reflecting sections 16 with elements 3b of *Kondo* to arrive at the claimed invention. Applicants respectfully disagree because the *Kondo* teaching of elements 3b would not have motivated a person of ordinary skill in the art to make the proposed combination.

In particular, elements 3b of *Kondo*, which the Examiner considered to read on the claimed fourth and fifth pattern parts with reflecting surfaces, are actually connection parts used for electrically connecting LED 2 with an external circuit. See Abstract, lines 1-3 and 8 from bottom of *Kondo*. A person of ordinary skill in the art would at once recognize that elements 3b of *Kondo* are equivalent to elements 12 of *Usui* which are also disclosed to provide electrical connection between LED 20 and an external circuit. See paragraph [0008] of *Usui*. The person of ordinary skill in the art would also note that the *Kondo* connection parts 3b are unrelated to the reflecting sections 16 of *Usui* (because they are designed for different purposes), and therefore he or she would not have modified the reflecting sections 16 of *Usui* with the configuration of *Kondo*'s connection parts 3b as the Examiner proposed.

The person of ordinary skill in the art would have modified, at best, the connection parts 12 of *Usui* with the configuration of *Kondo*'s connection parts 3b to obtain the advantage disclosed in paragraph [0031], the last three lines of *Kondo*. Particularly, *Kondo* teaches that the configuration of connections parts 3b allows to reduce stress when the LED assembly is pressed against connection wires 92 as shown in FIG. 5 of *Kondo*. This teaching might serve as a motivation to modify the connection parts 12 of *Usui* to obtain the advantage. However, the *Kondo* teaching

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would not have led a person of ordinary skill in the art to modify other, unrelated parts of *Usui*, such as reflecting sections 16, because the reflecting sections are not subject to any significant stress upon mounting the LED assembly on a circuit board, or the like. Modifying reflecting sections 16 of *Usui* with the configuration of connection parts 3b of *Kondo* would be worthless, and therefore, would not have been made by a person of ordinary skill in the art.

Accordingly, Applicants respectfully submit that the Examiner's proposed combination of *Usui* and *Kondo* is improper, lacking an adequate suggestion or motivation to make the combination.

Second, even assuming *arguendo* that *Usui* and *Kondo* could be combined as the Examiner suggested, the combined method would still fail to teach or disclose all limitations of independent claim 1, i.e., the fourth and fifth pattern parts (i) **integrated with both sides of the first pattern part** to allow surface of the fourth and fifth pattern parts to (ii) **face each other**.

The limitations find support in FIGs. 4(e) and 5(b) where it is disclosed that the plated fourth pattern part (41d, 51d) and the plated fifth pattern part (41e, 51e) are integrated with both sides of the first pattern part (41a, 51a) and are upwardly folded to face each other. The advantage of the claim limitations has been disclosed in the specification, i.e., the plated fourth and fifth pattern parts folded upwardly facing each other can reflect light emitted from the LED chip (42, 53), and concentrate the light to a predetermined direction. Thus, luminance characteristics of light emitted from the LED chip (42, 53) can be improved. See page 12, lines 2-8, and page 15, lines 2-5 of the specification. The applied references do not teach or suggest the highlighted limitations and cannot achieved the disclosed advantage.

With respect to limitation (i), *Usui* fails to teach a lead frame (15) which includes a "fourth pattern part" 16 and a "fifth pattern part" 16 integrated with the "first pattern part" 13; both of the "fourth pattern part" and "fifth pattern part" 16 cannot be considered integrated with the "first

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pattern part" 13 because of the apparent gap between the two parts 16, as best seen in FIGs. 4, 7, and 8 of *Usui*. Specifically, only one of the "fourth pattern part" and "fifth pattern part" 16, i.e., the one on the right in FIG. 7, is integrated with the "first pattern part" 13. The other "fourth pattern part" or "fifth pattern part" 16, i.e., the one on the left in FIG. 7, is integrated with the "third pattern part" 14, rather than the "first pattern part" 13. See also paragraph [0009] of *Usui*.

Kondo also fails to teach or suggest limitation (i) of claim 1. Contrary the Examiner's allegation, *Kondo* does not disclose or suggest both of the "fourth pattern part" and "fifth pattern part" 3b to be integrated with the "first pattern part" (presumably 3a in FIG. 1 of *Kondo*). The Examiner's attention is respectfully directed to attached *Exhibit A* which is an enlarged copy of FIG. 1 of *Kondo*. As can be seen in FIG. 1(a) in *Exhibit A*, one of the "fourth pattern part" and "fifth pattern part" 3b, i.e., the one on the right, is integrated with the "first pattern part" 3a, whereas the other of the "fourth pattern part" and "fifth pattern part" 3b, i.e., the one on the left, is integrated with the "third pattern part" 3A. Since each of parts 3a and 3A is electrically connected to one of the two terminals of LED 2, parts 3a and 3A cannot be integrated; otherwise LED 2 will be short-circuited. See also paragraphs [0012]-[0014] of *Kondo*. Therefore, each of the "fourth pattern part" and "fifth pattern part" 3b is integrated with one of the separated "first pattern part" 3a and "third pattern part" 3A, and hence, cannot be considered to be integrated with the "first pattern part" 3a, as presently claimed.

With respect to limitation (ii), the Examiner admitted in the Office Action that *Usui* does not teach the limitation. *Kondo* also fails to teach or suggest limitation (ii), because the "fourth pattern part" and "fifth pattern part" 3b of *Kondo* do not face each other, contrary to the Examiner's allegation. More specifically, in order to connect each external wire 5 to each of the "fourth pattern part" and "fifth pattern part" 3b, which are actually connecting sections, the connecting sections 3b should not be facing each other. Instead, the connecting sections 3b should be shifted laterally with respect to each other, as shown by arrows B and C in *Exhibit A*. This is necessary to avoid short

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circuit between the wires 5 (which extend in the directions of arrows B and C in *Exhibit A*) to be connected to the connecting sections 3b. The so arranged "fourth pattern part" and "fifth pattern part" 3b cannot be considered to face each other.

In addition, the connection parts 3b of *Kondo* are not arranged to reflect light, and therefore need not be positioned in a facing relationship and cannot achieve the advantage of the claimed invention. In particular, as described in paragraphs [0015], [0019], and [0020] of *Kondo*, the connecting sections are arranged for connecting the lead frame (3) to the external wire (5), rather than for reflecting the light emitted from the LED chip. See Figs. 1, 2 and 4 of *Kondo*. As shown in Figs. 1 and 3 of *Kondo*, the distance between the mold section 2 and the connecting sections 3b with a narrow width is so considerable that the connecting sections 3b cannot effectively reflect the light emitted from the LED chip within the mold section 2 and concentrate the light to a predetermined direction in the manner presently disclosed. Furthermore, the two connecting sections 3b may be bent in the direction opposite to the radiation direction of LED 2, or bent in different directions relative to each other. See Figs. 1(b), 1(c) and paragraph [0007] of *Kondo*. This is the evidence that the connecting sections 3b are not the portions for reflecting light and do not have reflective surfaces facing each other.

Accordingly, Applicants respectfully submit that the Examiner's proposed combination of *Usui* and *Kondo*, even if improper, would fail to teach or disclose all limitations of independent claim 1.

For the overwhelming reasons advanced above, Applicants respectfully submit that the 35 U.S.C. 103(a) rejection of independent claim 1 is erroneous and should be withdrawn. The rejection of other claims, i.e., claims 2-11, which include the same or similar limitations, should also be withdrawn for the reasons advanced with respect to claim 1.

Each of the Examiner's rejections has been traversed/overcome. Accordingly, Applicants

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respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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